Joint Comments of Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southern California Gas Company and Southern California Edison Company on the California Energy Commission's Programmable Communicating Thermostat (PCT) Requirements Development

Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Gas Company (SCG), and Southern California Edison Company (SCE) (collectively, the Joint Utilities) provide these joint comments on the California Energy Commission's (CEC) **Programmable Communicating Thermostat (PCT)** requirements development.

The Joint Utilities are very supportive of the CEC's programs and the state's objective to achieve energy reliability though demand side measures. The Joint Utilities have some concerns with the feasibility of developing a specific PCT communication protocol. Specifically, the Joint Utilities have concerns regarding the proposed AM/FM communication design developed by CEC consultants. As a result, we offer the following recommendations to improve the outcome.

PCT Program Coordination & Integration

New programs such as PCT should be effectively coordinated and integrated with existing initiatives such as Demand Response (DR), Energy Efficiency, and Advanced Metering Infrastructure (AMI). Effective coordination and integration with ongoing efforts would leverage each of the Joint Utilities' existing infrastructure and programs, thereby reducing inefficiencies caused by duplicative or "cross-purpose" outreach efforts.

PCT Program Objectives vs. Design Objectives

CEC staff and consultants articulated four specification criteria as guiding principles, intended to define CEC policy objectives for the PCT. The four criteria are:

- □ One PCT Systems Integration (SI) Interface (I/F) for all of CA (US)
    - Owner Installed and maintained

- Self installing and configuring

□ Common Signaling throughout CA (US)

□ Works with any minimum AMI system

□ Compatible with legacy technologies

Fundamentally, the above PCT criteria are not policy objectives of the initiative, but rather design objectives. It is unclear whether common signaling via a universal communication scheme throughout the state (or nationally), as the CEC proposes, is necessary or desirable to accomplish the CEC's PCT objective of achieving significant demand response. Since all electric distribution utilities including investor-owned utilities (IOUs), municipal utilities and irrigation districts may use a different AMI communication platform, a uniform statewide requirement is unlikely to be effective (and could, in fact, limit technology choices and competition). In addition, even if the utilities use the same AMI platform, it is still important to maintain an open the market for PCTs and other energy management devices operated by a wide variety of communication means, to ensure that the utilities can chose the most cost-effective and reliable communication method or combination of methods. The Joint Utilities understand the CEC's desire to mandate PCTs requirements to achieve policy objectives, but design flexibility is essential for integrating the PCT program with other programs. The Joint Utilities envision employing PCTs for additional purposes including grid reliability, price response and utility economic dispatch. Designing PCTs for multiple uses will give utilities the ability to attain additional benefits for their customers and the system as a whole.

Further, PCTs should be compatible with and leverage future AMI investment. The Joint Utilities encourage continued development of an open architecture system, and do not recommend a single communications medium or proprietary technology (*i.e.*, one-way communications with AM/FM). Currently, there are numerous existing communication methods (*e.g.*, powerline carrier and RF), and several alternative communication protocols and media in various phases of development and testing (*e.g.*, broadband over powerline (BPL) or wireless Wi-Max). These existing, proven and new, emerging communications methods would allow PCT manufacturers to avoid the cost of including the AM/FM communication link if the local serving utility has an alternative system available. The Joint

Utilities submit that imposing a mandatory communication method in addition to the utility's communication method will cause undue complexity at the statewide or California Independent System Operator (CAISO) level. Communication complications could be avoided, for example, by installing at the "head end" of each utility's system, an interface that translates a single message into each utility's specific communication network.

The Joint Utilities are actively engaged in identifying PCT requirements that will lead to a technology solution. These requirements must be unambiguous, testable, verifiable, and complete. Once established, we will invite public comment on methodologies and reference designs that comply with those requirements as well as address the business needs of the individual utilities. Specifying a technology solution now before the requirements gathering phase is complete, however, will lead to a disjointed and less cost effective result. The Joint Utilities therefore, encourage the CEC to develop policy goals that will enable us to define our requirements.

Utility control of PCT is essential for reliable distribution grid management and economic dispatch

It is important to recognize the roles of the utility grid operators and energy procurement groups that manage the distribution system and utility energy supply respectively. These roles exist separately and in coordination with the CAISO. The current PCT proposal appears to overlook these utility roles, and implies that the CAISO will determine whether a PCT system would be dispatched for grid reliability or economics. While the CAISO does identify transmission system conditions that may warrant the use of a PCT system, the CAISO works with the individual utilities who make the distribution level decisions to support their transmission level needs. Further, it is our experience that the utilities would use the system more frequently addressing distribution constraints that are not within CAISO's jurisdiction. In addition, there seems to be some misunderstanding in the PCT proposal regarding the role of the IOUs in procuring energy for our customers and dispatching generation and other resources, such as the potential PCT program for economics. To be clear, the IOUs do, in fact, dispatch resources daily and in "real-time" to

balance their loads and resources. This economic dispatch is performed in coordination with the CAISO, but at the discretion of each IOU for its own service territory.

The Joint Utilities are committed to working with the vendor community and CEC to develop PCT requirements.

The Joint Utilities realize that the CEC has a very tight schedule to implement the 2008 new building code standards. The Joint Utilities are committed to working with all pertinent stakeholders during the first and second quarters of this year to fully address the communications requirements, options, costs and risks in order to facilitate the development of the Title 24 PCT requirements. In support of this commitment, the Joint Utilities have scheduled a planning session later this month to prepare a work plan that is intended to be compatible with the overall Title 24 timeline for the PCT.